NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RIPARIAN HERBACEOUS COVER

(Acre)

CODE 390

DEFINITION

Riparian areas are ecosystems that occur along water courses or at the fringe of water bodies. Riparian herbaceous cover consists of grasses, grass-like plants and forbs.

PURPOSE

Riparian areas serve the following functions:

- Riparian areas provide habitat (food, shelter and water) for aquatic and terrestrial organisms.
- Intercept direct solar radiation, create shade and increase the depth to width ratio to help maintain or restore suitable water temperatures for fish and other aquatic organisms while providing a milder microclimate for wildlife.
- Improve and protect water quality by reducing the amount of sediment and other pollutants, such as pesticides, organic, and nutrients in surface runoff as well as nutrients and chemicals in shallow ground water flow.
- Provide food, in the form of plant detritus, for aquatic insects which are important food items for fish.
- Help stabilize the channel bed and streambank.
- To serve as corridors to provide landscape linkages between existing habitats.
- Provide room for watercourses to establish geomorphic stability.
- To manage existing riparian herbaceous habitat to improve or maintain desired plant communities.
- Increase net carbon storage in the biomass and soil.

CONDITION WHERE PRACTICE APPLIES

Along watercourses or on the fringe of water bodies where the natural plant community is dominated by herbaceous vegetation.

Where the ecosystem has been altered and the potential natural plant community has changed or has been converted to cropland, pastureland, grazing land, etc.

CRITERIA

General Criteria Applicable to All Purposes

Select native species that are adapted to site conditions and provide diversity, cover and food for wildlife. Species selected should also provide a deep, binding root mass to strengthen streambanks and improve soil health. Refer to Vermont practice standard Critical Area Planting – 342 for information on seed mixes, seeding rates and planting times.

Protect and enhance riparian vegetation and water quality by reducing the use of that vegetation for haying and grazing until the desired plant community is well established. A plan for limited livestock grazing or haying will be designed to protect and enhance established and emerging vegetation, stream bank stability, wildlife habitat, and to keep livestock out of the stream during critical periods for aquatic species. See Practice Standard 528 – Prescribed Grazing.

Harmful pests present on the site will be controlled or eliminated as necessary to achieve and maintain the intended purpose.

Management systems applied will be designed to maintain the vigor and reproduction of the desired plant community. Timing of haying or grazing periods will avoid periods when streambanks are saturated and vulnerable to livestock or mechanical damage.

The plant communities established and the target successional stage will depend on wildlife needs, existing resources in the watershed, and local management objectives.

Necessary site preparation and planting shall be done at a time and manner to insure survival and growth of selected species. Only viable, high quality and adapted planting stock will be used. Site preparation shall be sufficient for establishment and growth of selected species and be done in a manner that does not compromise the intended purpose.

The management plan shall consider habitat and wildlife objectives such as: habitat diversity, habitat linkages, daily and seasonal habitat ranges, limiting factors and native plant communities. Mowing and harvesting shall not occur during the primary nesting season of grassland birds (April 15-August 1). Mowing and harvest work should be completed in August to allow re-growth for fall, winter and spring cover.

Riparian widths will vary depending on the requirements of wildlife species and associated environmental concerns but the minimum width will be 35 feet.

Other applicable practices include, but are not limited to:

- Streambank and Shoreline Protection – (580)
- Stream Channel Stabilization – (584)
- Vegetative Bioengineering - NCS
- Fence – (382)
- Riparian Forest Buffer – (391)
- Pasture and Hayland Planting – (512)
- Range Planting – (550)
- Prescribed Grazing – (528)

Additional Criteria to Promote or Improve Wildlife Habitat

The width of the buffer for wildlife purposes should be at least 50 feet and may extend up to 150 feet or wider.

A mixture of at least 4 species of grasses (either warm season or cool season), forbs (wildflowers) and legumes shall be selected in order to provide additional benefits for wildlife enhancement.

Warm season grasses, such as big and little bluestem, switchgrass and indiangrass, provide valuable year round habitat although they typically take a few growing seasons to establish. See 'Vegetating with Native Grasses in Northeastern North America.'

Preferred cool season grasses for wildlife include timothy, orchard grass, redtop, Canada wildrye and Virginia wildrye. Legumes, such as ladino clover, common white clover, and red clover may be mixed in to improve the variety and food value of the stand.

Additional Criteria to Protect or Improve Water Quality

Concentrated flow erosion or mass soil movement shall be controlled in the up gradient area prior to establishment of the riparian herbaceous cover.

The native or natural plant community should be managed and maintained to optimize functions of the riparian zone which control erosion and maintain water quality.

Additional Criteria for Increasing Net Carbon Storage in Biomass and Soils

Maximize the width and length of the herbaceous riparian buffer to fit the site.

Plant species used will have the highest rates of carbon sequestration and biomass production for the soil and other site conditions.

CONSIDERATIONS

Site hydrology must be considered. Plant species selected must be adapted to the duration of saturation and inundation of the site.

Channel and streambank stability must be considered in selecting this practice or determining that this practice may need to be combined with other practices that better address stability issues.

This practice can be combined with filter strips to improve water quality.

Considerations should be given to how this practice will provide riparian habitat and linkage to other habitats.

Target riparian buffer restoration on a watershed basis to address habitat fragmentation, connectivity, and provide corridors for wildlife by maintaining continuous streamside vegetation.

Establish alternative water sources or controlled access stream crossings to manage livestock access to the stream and riparian area.

Select plant species that are native and have multiple values such as those suited for biomass, nesting, aesthetics and tolerance to locally used herbicides.

Avoid plant species which may be alternate hosts to undesirable pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

The location, layout and density of the buffer should compliment natural features.

Corridor configuration, species planted and management should enhance habitats for threatened, endangered and other species of concern, where applicable.

Use plant species that provide full ground coverage to reduce particulate matter generation during establishment and maintenance operations.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation. Plans and specifications will include details on species selected, seedbed preparation, fertilizer and pesticide use, seeding rates, and seeding method. Acceptable use of the area for mowing, cutting or grazing will be detailed in writing.

OPERATION AND MAINTENANCE

The purpose of operation, maintenance and management is to insure that the practice functions as intended over time.

The riparian area will be inspected periodically and protected to maintain the intended purpose from adverse impacts such as excessive vehicular and pedestrian traffic, pest infestations, pesticide use on adjacent lands, livestock damage and fire.

As applicable, control the concentrated flow within the buffer. Control of concentrated flow erosion or mass soil movement shall be continued in the up-gradient area to maintain riparian function.

Any use of fertilizers, pesticides and other chemicals to assure riparian area function shall not compromise the intended purpose.

REFERENCES

Sargent, M.S and Carter, K.S., ed. 1999. Managing Michigan Wildlife: A Landowners Guide: Field Borders and Corridors. Michigan United Conservation Clubs, East Lansing, MI. 297pp. http://www.michigandnr.com/publications/pdfs/huntingwildlifehabitat/Landowners_Guide/Habitat_Mgmt/Cropland/index.htm

USDA NRCS and Ducks Unlimited. 1997. Vegetating with Native Grasses in Northeastern North America. 63pp.

USDA NRCS WHMI and WHC. 1999. Grassland Birds – Fish and Wildlife Habitat Management Leaflet No. 8. 12pp. http://www.whmi.nrcs.usda.gov/technical/leaflet.htm